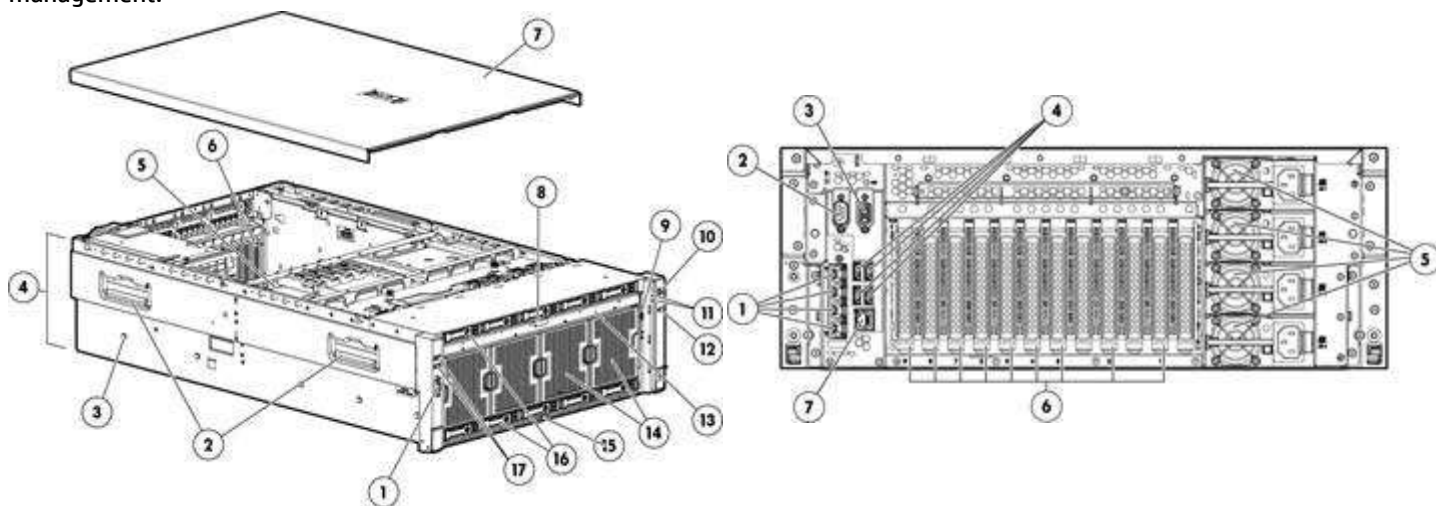


### Overview

#### HP ProLiant DL580 Gen8

The HP ProLiant DL580 Gen8 Server is an enterprise-grade four socket (4S) x86 server offering breakthrough performance, rock-solid reliability, and compelling consolidation and manageability efficiencies. It is ideal for mission-critical enterprise, business intelligence, and database applications.

Featuring Intel® Xeon® E7-4800/8800 v2 processors, the DL580 Gen8 offers blazing fast results with enhanced processor performance, more memory slots (96 DIMMs), greater IO bandwidth (9 PCIe Gen3.0 slots), and increased storage performance (12 Gbps SAS). HP ProLiant DL580 Gen8 has security and data protection features for system resiliency that your business can depend on. With intelligent manageability through HP OneView, iLO 4, and user-inspired features, you get faster, lower cost infrastructure management.



#### Front View:

1. One front video port
2. Server lifting handles
3. Universal Tool-less "Snap in" sliding rail solution
4. 4U (7" height) form factor
5. Support for up to four Intel® Xeon® 4800/8800 v2 Processors
6. Up to 9 slots supported; all full-length/full-height
7. Quick removal access panel
8. Quick release lever for Processor and Memory drawer
9. Slide out Systems Insight Display
10. Power button
11. Health and Network LEDs
12. Unit ID LED
13. Front accessible Processor and memory drawer
14. 4 Hot Plug Fans (eight rotors with N+1 redundancy)
15. Asset tag
16. Support for up to 10 Small Form-Factor (SFF) drives
17. Two front accessible USB 2.0 ports

#### Rear View:

1. NIC ports
2. Serial port
3. Video port
4. Four (4) USB ports
5. Hot Plug Redundant Power Supplies (2 or 4 depending on the model)
6. 9 PCIe 3.0 IO Expansion Slots
7. iLO connector

#### What's New

- Enhanced memory speeds for 4GB, 8GB, 16GB DIMMs in performance and lockstep mode.
- Support for HP IB FDR/EN 40Gb 2P 544+FLR-QSFP Adptr
- Support for 64 GB DIMMs. Extends DL580 Gen8 maximum memory up to 6 TB.
- Support for 81E and 82E 8 Gbps Fibre-Channel Host Bus Adapter
- Support for FibreChannel over Ethernet (FCOE) functionality in CN1100R and 534FLR-SFP+

### Standard Features

**NOTE:** For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

#### Processor

One or more of the following depending on model

##### Fifteen-Core Processors

Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processor

Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) Processor

Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor

Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) Processor

**NOTE:** This is a power optimized processor

##### Twelve-Core Processors

Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) Processor

Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processor

Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) Processor

**NOTE:** This is frequency optimized processor suited high performance computing applications

##### Ten-Core Processors

Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processor

Intel® Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) Processor

**NOTE:** This is a lower core, higher frequency processor for software licensing cost optimization

##### Eight-Core Processors

Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) Processor

##### Six-Core Processors

Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processor

Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) Processor

**NOTE:** This is a lower core, higher frequency processor for software licensing cost optimization

#### Cache Memory

One of the following depending on model

37.5MB (1 x 37.5MB) Level 3 cache (E7-4890 v2, E7-8880Lv2, E7-4880v2, E7-8891v2, E7-8893v2)

30MB (1 x 30MB) Level 3 cache (E7-8857v2, E7-4870v2, E7-4860v2)

24MB (1 x 24MB) Level 3 cache (E7-4850v2)

20MB (1 x 20MB) Level 3 cache (E7-4830v2)

16MB (1 x 16MB) Level 3 cache (E7-4820v2)

12MB (1 x 12MB) Level 3 cache (E7-4809v2)

#### Chipset

Intel® C602J Chipset

Intel® Xeon® E7-4800/8800 v2 Processor Family

**NOTE:** For more information regarding Intel chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>

#### Upgradeability

Up to:

Four (4) processors

Ninety-six (96) DDR3 DIMM slots

Nine (9) PCIe Gen3 expansion slots

**NOTE:** PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion slots" section for more details.

Ten (10) SFF internal HDD/SSD drive bays

**NOTE:** Five drive bays come standard. An optional backplane kit with five drive bays can be ordered for ten drives.

Four (4) redundant hot-plug power supplies

#### Memory

Type

HP SmartMemory

### Standard Features

One of the following  
depending on Model

	DDR3 Registered (RDIMM) and Load Reduced (LRDIMM)
DIMM Slots Available	96 DIMM slots
Maximum	6TB (96 x 64GB)

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table below or the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

### System Fault Management and Diagnostics

HP ProLiant DL580 Gen8 offers advanced error recovery, component quarantine, fault tolerance and event reporting features to enable class-leading availability and rock-solid reliability that businesses can depend on. The DL580 Gen8 server firmware features advanced machine check architecture and memory fault tolerance capabilities that customers need for running their mission-critical applications. These advanced fault management features combine with quality components (HP Qualified Options) and extensive qualification to provide a high degree of system availability.

#### HP Advanced Error Recovery

Introduced with the HP ProLiant DL580 Gen8, HP Advanced Error Recovery enables applications to recover from uncorrectable errors found in processor, cache and memory during execution. The system firmware works with the operating system and/or hypervisor and/or end-application to enable the optimal recovery response so that the impact of the error can be avoided or minimized. Where such an error would have crashed the system in the past, with HP Advanced Error Recovery, the system can continue to function with limiting the impact of the error to a killed/re-started thread, process and/or virtual machine.

#### NOTE:

- Supported on Intel® E7-4800/8800 v2 based systems only
- On select Operating Systems, Hypervisors and end-applications that support Intel Machine Check Architecture Recovery feature.
  - Windows Server 2012 R2 and Hyper-V 2012 R2
  - Windows Server 2012 (requires Microsoft hotfix 2901012) and Hyper-V 2012
  - Redhat Enterprise Linux 6.4 and later
  - SLES 11 SP3 and later

#### HP Memory Quarantine

HP Memory Quarantine Identifies memory regions containing uncorrectable hardware errors by using a patrol scrubber and isolates the bad memory location before it affects other data. If an error is found, the hardware attempts to correct it. If the hardware cannot correct the error, the platform firmware notifies the operating system. Depending on the state of the memory pages associated with the identified memory region, the OS or hypervisor may take those pages out of the available pool. If the memory pages are already committed to a virtual machine (VM), the OS or hypervisor may choose to shut down the associated VM (Guest OS) or cause a Machine Check Exception to the Guest OS. The associated VM (Guest OS) might in turn close down the affected thread or process or it might shut down on its own. You can restart the halted VM or process once you replace the bad memory at the server's next maintenance cycle.

#### NOTE:

### Standard Features

- Supported on Intel® E7-4800/8800 and E7 v2 based systems only
- On select Operating Systems, Hypervisors and end-applications that support Machine Check Architecture Recovery functionality.
  - Windows Server 2012 R2 and Hyper-V 2012 R2
  - Windows Server 2012 (requires Microsoft hotfix 2901012) and Hyper-V 2012
  - Windows Server 2008 R2 and Hyper-V 2008 R2
  - Windows Server 2008 and Hyper-V 2008
  - Redhat Enterprise Linux 6.4
  - SLES 11 SP3

#### HP Advanced Error Containment

The DL580 Gen8 features advanced PCIe error containment capability that prevents corrupted data propagation. If data corruption is found on the PCIe bus, the system re-sets the PCIe root port and re-starts the transaction. This feature helps protect customer data and prevents the error from creating a chain of failures across the datacenter.

#### NOTE:

- Supported on Intel® E7-4800/8800 and E7 v2 based systems only

#### HP Advanced Fault Resiliency

- Double Data Device Correction (DDDC+1) - Detects and corrects up to two DRAM chip failures for every x4 DIMM plus single bit error in the server. DDDC requires memory lockstep mode and may impact performance to varying degrees depending on workload memory access characteristics.  
**NOTE:** Supported on Intel® E7-4800/8800 based systems only.
- Single Data Device Correction (SDDC+1) - Detects and corrects one DRAM chip failure for every x4 DIMM in the server. Further corrects single-bit errors after one DRAM chip failure. SDDC is supported in performance mode and does not impact system performance.  
**NOTE:** Supported on Intel® E7-4800/8800 based systems only.
- Online Memory Sparing - Tracks excessive number of correctable errors and copies the contents of an unhealthy rank to an available spare rank in advance of multi-bit or persistent single-bit failures that may result in future uncorrectable faults. Since a DIMM or a rank is needed to perform sparing, this technique reduces the total amount of available memory by the amount of memory used for sparing.
- Memory Mirroring - System maintains two copies of all data. If an uncorrectable memory error occurs, the system automatically retrieves the good data from the mirrored (redundant) copy. Memory Mirroring consumes 50% of the system memory capacity.

**NOTE:** Memory mirroring will be supported in a system firmware update post initial launch.

- Redundant Interconnects and Failover - The DL580 Gen8 system and Intel® Xeon® E7-4800/8800 v2 processors combine to provide a high degree of fault tolerance and failover capabilities for key processor-processor or memory-processor links or clocks.
- Hot-plug redundant power supplies and hot-plug fans - The DL580 Gen8 server features N+N redundant power supplies and N+1 rotor (each fan module contains two rotors) redundancy to keep your system running in the unlikely case a power supply or rotor malfunctions.
  - Each fan contains two independent rotors. If one rotor fails, system continues operation in a degraded condition with remaining rotors. If two rotors fail, system initiates an OS shutdown. Two rotor failures is a highly unlikely event.
  - If a fan module (i.e. two rotors) is removed as a hot-plug event, the replacement fan module must be installed within approximately 60 seconds before the system

### Standard Features

initiates an OS shutdown.

#### FlexibleLOM

HP ProLiant Gen8 servers offer a new flexible network technology - FlexibleLOMs, which offers customers a choice of 1Gb, 10Gb, or 10Gb base-T Ethernet or converged networking in their embedded adapter.

HP Ethernet 1Gb 4-port 331FLR FIO Adapter

HP Ethernet 1Gb 4-port 366FLR FIO Adapter

HP Ethernet 10Gb 2-port 533FLR-T FIO Adapter

HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter

**NOTE:** This adapter does not support FCOE Boot from SAN functionality on VMWare and FCOE with RHEL 5.9.

HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter

HP Ethernet 10Gb 2-port 561FLR-T FIO Adptr

HP IB FDR/EN 40Gb 2P 544+FLR-QSFP Adptr

**NOTE:** For additional details see the Networking Section of this document.

**NOTE:** Wake-on-Lan feature is not supported on the DL580 Gen8 with FlexLOMs

#### Expansion Slots

**NOTE:** Up to 9 slots supported; all full-length/full-height. Standard: 4 PCI-E 3.0 x8, 5 PCI-E 3.0 x16.

Processor	Expansion Slot #	Technology	Width	Connector Width*	Bus / Dev Number**	Form Factor	Notes
4	1	PCIe 3.0	x16	x16	C0/03/0	FH/FL	N/A
4	2	PCIe 3.0	x16	x16	C0/02/0	FH/FL	N/A
3	3	PCIe 3.0	x16	x16	80/03/0	FH/FL	N/A
3	4	PCIe 3.0	x8	x16	80/02/0	FH/FL	N/A
3	5	PCIe 3.0	x8	x16	80/02/1	FH/FL	N/A
2	6	PCIe 3.0	x16	x16	40/03/0	FH/FL	N/A
2	7	PCIe 3.0	x8	x16	40/02/0	FH/FL	N/A
2	8	PCIe 3.0	x8	x16	40/02/1	FH/FL	N/A
1	9	PCIe 3.0	x16	x16	00/03/0	FH/FL	N/A

**NOTE:** PCIe slot availability is dependent on the number of processors installed.

\* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

\*\* Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

FL= Full length; FH = Full height.

#### Storage Controller

One of the following depending on Model

HP Smart Array P830i/2G FBWC Controller

The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite data retention.

- Delivers 12 Gb/s line rate performance
- Standard on all Models
- Supports HP Secure Encryption as an option
- Transportable data protection
- Increases overall controller performance

**NOTE:** Please refer to the HP Smart Array P830 Controller QuickSpecs for more information.

### Standard Features

Internal Storage Devices	Hard Disk Drive Backplane	Internal SAS lower and upper backplanes support up to ten SFF hard disk drives or solid state drives	
	<b>NOTE:</b> For CTO models, five (5) lower drive bays ship standard and five (5) upper drive bays can be ordered separately with a drive backplane kit. For BTO models, please refer to the pre-configured models section below.		
	Diskette Drive	None	
	Optional Optical Drive	None	
	Hard Drives	None ship standard	
Maximum Internal Storage	Hot Plug SFF SAS	12 TB	10 x 1.2 TB
	Hot Plug SFF SAS SSD	16 TB	10 x 1.6 TB
	Hot Plug SFF SATA SSD	8 TB	10 x 800 GB
Interfaces	Serial	1	
	Video	1 front; 1 rear	
	Network RJ-45	4	
	iLO 4 Remote Management	1	
	micro-SD Slot	1	
	USB 2.0 Ports	8 total: 2 front; 4 rear; 2 internal	
Industry Standard Compliance	ACPI 2.0. Compliant		
	PCIe 2.0 Compliant		
	PXE Support		
	WOL Support		
	<b>NOTE:</b> Not supported with FlexLOMs on DL580 Gen8		
	Physical Address Extension (PAE) Support		
	Microsoft® Logo certifications		
	USB 2.0 Support		
Server Power Cords	Server ships with high-voltage server to PDU power cord		
	<b>NOTE:</b> If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a>		
Common Slot Power Supply	HP 1500W Common Slot Platinum Plus Hot Plug Power Supply		
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply		
One of the following depending on power requirements	<b>NOTE:</b> 1500W power supply supports high line voltage only		
	<b>NOTE:</b> A minimum of two (2) power supplies are required. Four (4) 1500W power supplies offers N+N redundancy for highly loaded configurations.		
	Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> .		
HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are			



### Standard Features

tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to [www.hp.com/go/ipd](http://www.hp.com/go/ipd).

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

#### System Fans

4 Hot Plug Fans (eight rotors with N+1 redundancy)

#### Graphics

Integrated Matrox G200 video standard  
1280 x 1024 (32 bpp)  
1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory  
16 MB Flash  
256 MB DDR 3 with ECC (112 MB after ECC and video)

#### Form Factor

4U rack

#### HP Server UEFI ROM

##### Legacy Mode or Unified Extensible Firmware Interface (UEFI) Mode

HP's ProLiant System BIOS is an EDK2 UEFI solution, and adheres to the latest revisions of UEFI Class 2 specifications which supports both legacy boot and UEFI boot operation. The HP ProLiant DL580 Gen8 defaults to legacy boot operation and can be factory or field configured for UEFI boot operation.

**NOTE:** For UEFI boot operation, boot environment and OS image installations should be configured properly to support UEFI.

**NOTE:** For more information on HP's ProLiant System BIOS and UEFI, see the UEFI Information Library: <http://www.hp.com/go/uefi/docs>.

**NOTE:** HP UEFI F10 Setting (758959-B21) can be selected to configure the system in UEFI mode in the factory.

To modify the server configuration ROM default settings, press F9 in the HP ProLiant POST screen to enter the UEFI System Utilities screen. By default, the System Utilities menus are in the English language.

UEFI enables numerous new capabilities, including both industry standard functionality and features specific to HP ProLiant servers. Following are some of the features that UEFI enables and that the HP ProLiant DL580 Gen8 can support when configured for UEFI boot operation:

- **Secure Boot** - A new feature in which the system firmware, option card firmware, operating systems, and software collaborate to greatly enhance platform security.

### Standard Features

- Operating system specific functionality - Microsoft Windows 2012 supports several features only when installed in UEFI mode.
- Support for > 2.2 TB (using GPT) boot drives - Such drives could previously only be used for boot drives when using RAID solutions such as HP Smart Array.
- UEFI Shell - Provides a pre-boot environment for running scripts and tools. The HP ProLiant UEFI Shell provides both standard capabilities as well as numerous enhancements.
- PXE boot support for IPv6 networks.
- PXE Multicast Boot allowing for faster PXE deployments for large numbers of servers.
- Boot support for option cards that only support a UEFI option ROM.

#### NOTE:

- When the server is configured for UEFI Boot Mode, PXE servers must be configured with a UEFI boot image.
- When the server boots in UEFI mode, it does not boot media with a legacy OS installation. This includes DOS targets and Windows or Linux systems installed in Legacy mode. The reverse is also true for servers that boot in Legacy mode.
- If Microsoft Windows 2008 or Windows 2008 R2 is used in UEFI Boot Mode, UEFI Optimized Mode must be disabled (this option is enabled by default). This is required to work around an issue in Windows 2008 / 2008 R2 that requires legacy BIOS components necessary for video operations in Windows.

#### Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server  
Red Hat Enterprise Linux (RHEL)  
SUSE Linux Enterprise Server (SLES)  
VMware

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/DL580Gen8>

#### On System Management

##### HP iLO Management

HP iLO Management is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management portfolio includes:

**HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine

**HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.

**HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.

**HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media.

To start Intelligent Provisioning:

Press the F10 key during the ProLiant Gen8 server boot



### Standard Features

Process. Please go to the Intelligent Provisioning website at [www.hp.com/go/intelligentprovisioning](http://www.hp.com/go/intelligentprovisioning) for additional information and to view usage videos. Use the Service Pack for ProLiant (SPP) at [www.hp.com/go/spp](http://www.hp.com/go/spp) to get firmware and software updates.

**HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: [www.hp.com/go/ilo/mobileapp](http://www.hp.com/go/ilo/mobileapp)

**NOTE:** For more information, visit: <http://www.hp.com/go/ilo> or HP iLO Management Engine technologies whitepaper

#### HP Insight Management

#### HP Service Pack for ProLiant

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support for each Service Pack for ProLiant release.

The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

**NOTE:** The Service Pack for ProLiant (which includes HP SUM) can be downloaded from [www.hp.com/go/spp/download](http://www.hp.com/go/spp/download). More information can be found: <http://www.hp.com/go/SmartUpdate>, [www.hp.com/go/spp](http://www.hp.com/go/spp) and <http://www.hp.com/go/hpsum>

#### Intelligent Manageability

HP Systems Insight Manager  
SmartStart  
Redundant ROM



### Standard Features

Remote Flash ROM  
Management Agents  
Integrated Management Log (IML)  
Automatic Server Recovery-2 (ASR-2)  
ROM-Based Setup Utility (RBSU)  
Dynamic Sector Repairing (with Smart Array Controllers)  
Drive Parameter Tracking (with Smart Array Controllers)  
Pre-Failure Warranty (covers processors, SAS hard drives and memory)  
Redundant/adaptive load balancing NIC Support  
Hot Spare Boot

**NOTE:** Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).

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#### HP Insight Online

HP Insight Online is a new capability available through the HP Support Center portal for one stop, secure access to product and HP support information specific to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. [www.hp.com/go/insightonline](http://www.hp.com/go/insightonline)

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#### HP Proactive Insight experience

Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: [www.hp.com/go/proactiveinsightexperience](http://www.hp.com/go/proactiveinsightexperience)

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#### Security

Power-on password  
Keyboard password  
External USB port enable/disable  
Network Server Mode  
Serial interface control  
Administrator's password  
Trusted Platform Module (TPM)  
Intel® Secure Key  
HP Secure Encryption (Smart Array Controller)  
HP Advanced Data Guard (Smart Array Controller)

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#### Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Optional Features

#### HP Insight management

##### HP Insight Control

HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <http://www.hp.com/go/insightcontrol>.

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: <http://www.hp.com/services/insight>.

##### HP iLO Advanced

HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: <http://www.hp.com/go/iloadvance>

##### HP Matrix Operating Environment

The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

**NOTE:** For more information, visit: <http://www.hp.com/go/matrixoe>

#### High Performance Clusters

##### HP Cluster Platforms

HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. <http://www.hp.com/go/clusters>

##### HP HPC Interconnects

High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. <http://www.hp.com/techservers/clusters/ucp/index.html>

##### HP Insight Cluster Management Utility

HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <http://www.hp.com/go/cmu>

#### Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage

### Optional Features

infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**  
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**  
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**  
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**  
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**  
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**  
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

**NOTE:** For more information available Storage Software including QuickSpecs, please see: [www.hp.com/go/storage/software](http://www.hp.com/go/storage/software).

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#### Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

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#### HP Simple Configurator

SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

### Service and Support

#### Service and Support

#### HP Technology Services for Industry Standard Servers

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

#### Protect your business beyond warranty with HP Care Pack Services

HP Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

### Recommended HP Care Pack Services for your HP product

#### Optimized Care

#### HP Proactive Care with 6 hour call-to-repair commitment, three year Care Pack Service

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our highest level reactive coverage and enhanced escalation management, HP's 24x7, six hour call-to-repair hardware commitment. HP is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. Service includes 24x7 collaborative software support for leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

#### Standard Care

#### HP Proactive Care with 24x7 coverage, three year Care Pack Service

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

#### Related Services

#### HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

#### Factory Express for Servers and storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

#### Data Privacy Services

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you

### Service and Support

to safely retire IT assets and capture any remaining value from the hardware.  
[www.hp.com/services/dataprivacy](http://www.hp.com/services/dataprivacy)

Additional HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

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#### Get connected to HP to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit:  
[www.hp.com/go/proactiveinsightexperience](http://www.hp.com/go/proactiveinsightexperience)

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#### HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalize IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

**NOTE:** HP Support Center Mobile App is subject to local availability.

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#### Parts and Materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.

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#### For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>



### Pre-configured Models

**NOTE:** For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

**NOTE:** Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

**NOTE:** HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

**NOTE:** If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

**NOTE:** Not all models are available in all regions. Check with your local country HP offices for availability.

### High Performance Models

<b>HP ProLiant DL580 Gen8 E7-4890v2 4P 128GB-R P830i SAS 5 SFF 1500W RPS Server</b> 728544-xx1	<b>Processor(s)</b>	(4) Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processors
	<b>Cache Memory</b>	37.5MB (1 x 37.5MB) Level 3 cache
	<b>Memory</b>	128GB (16 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (8) Memory Cartridges
	<b>IO Expansion</b>	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)
	<b>Network Controller</b>	HP FlexFabric 10Gb 2P 534FLR-SFP+ Adapter
	<b>Storage Controller</b>	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	<b>Bays and Hard Drives</b>	Ten (10) SFF HDD/SSD drive bays. No drives ship standard
	<b>Optical Drive</b>	None
	<b>Power Supply</b>	(4) HP 1500W Common Slot Platinum Plus Hot Plug Power Supplies
	<b>Fans</b>	4 Hot Plug Fans (eight rotors with N+1 redundancy)
	<b>Integrated Lights Out</b>	Integrated Lights-Out 4 (iLO 4) ships standard
	<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	<b>Form Factor</b>	Rack 4U (rail kit and cable management arm is included)
	<b>BIOS</b>	Legacy BIOS (default) or UEFI BIOS (field configurable)
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

<b>HP ProLiant DL580 Gen8 E7-4850v2 4P 128GB-R P830i/2G 534FLR-SFP+ 1500W RPS Svr</b> 728546-xx1	<b>Processor(s)</b>	(4) Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processors
	<b>Cache Memory</b>	24MB (1 x 24MB) Level 3 cache
	<b>Memory</b>	128GB (16 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (8) Memory Cartridges
	<b>IO Expansion</b>	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)
	<b>Network Controller</b>	HP FlexFabric 10Gb 2P 534FLR-SFP+ Adapter
	<b>Storage Controller</b>	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	<b>Bays and Hard Drives</b>	Ten (10) SFF HDD/SSD drive bays. No drives ship standard
	<b>Optical Drive</b>	None
	<b>Power Supply</b>	(4) HP 1500W Common Slot Platinum Plus Hot Plug Power Supplies
	<b>Fans</b>	4 Hot Plug Fans (eight rotors with N+1 redundancy)
	<b>Integrated Lights Out</b>	Integrated Lights-Out 4 (iLO 4) ships standard
	<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	<b>Form Factor</b>	Rack 4U (rail kit and cable management arm is included)
	<b>BIOS</b>	Legacy mode (default) or UEFI BIOS (field configurable)

### Pre-configured Models

#### Warranty

Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

### Base Models

**HP ProLiant DL580 Gen8  
E7-4809v2 2P 64GB-R  
P830i/2G 331FLR 1200W  
PS Server  
728547-xx1**

#### Processor(s)

(2) Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processors

#### Cache Memory

12MB (1 x 12MB) Level 3 cache

#### Memory

64GB (8 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (4) Memory Cartridges

#### IO Expansion

(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)

**NOTE:** PCIe slot availability is dependent on the number of processors installed. Please refer to the expansion slots section for more details.

#### Network Controller

HP Ethernet 1Gb 4P 331FLR Adptr

#### Storage Controller

HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller

#### Bays and Hard Drives

Five (5) lower drive bays. No drives ship standard

#### Optical Drive

None

#### Power Supply

(2) HP 1200W Common Slot Platinum Plus Hot Plug Power Supplies

#### Fans

4 Hot Plug Fans (eight rotors with N+1 redundancy)

#### Integrated Lights Out

Integrated Lights-Out 4 (iLO 4) ships standard

#### Form Factor

Rack 4U (rail kit and cable management arm is included)

#### BIOS

Legacy mode (default) or UEFI BIOS (field configurable)

#### Warranty

Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

#### Country Code Key

xx = 00

US

xx = 20

Brazil

xx = 29

Japan

xx = 37

APD

xx = 42

Europe

xx = AA

PRC

### Configuration Information - Factory Integrated Models

**NOTE:** This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

**NOTE:** Factory Integrated Models must start with a CTO Server

**NOTE:** FIO indicates that this option is only available as a factory installable option.

### Step 1: Base Configuration

<b>HP Models</b>	HP ProLiant DL580 Gen8 Configure-to-order Server	728551-B21
	<b>Factory Integrated Models ship with:</b>	
	4U Server Chassis with front-accessible processor and memory drawer	
	Intel® 602J Chipset	
	Embedded HP Smart Array 12 G P830i Controller	
	<b>NOTE:</b> FBWC is required and should be selected separately when ordering	
	(5) Hot-plug SAS/SATA SFF SSD or HDD Bays (Lower)	
	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)	
	(8) USB 2.0 ports (2 front, 4 rear, 2 internal)	
	(2) video ports (1 front, 1 rear)	
	(1) microSD card slot	
	(1) Trusted Platform Module (TPM) connector	
	4 Hot Plug Fans (eight rotors with N+1 redundancy), front accessible	
	BIOS Legacy mode(default) or Unified Extensible Firmware Interface (UEFI) mode (Optional)	
	HP Integrated Lights-Out 4 (iLO4) standard management	
	HP iLO4 Embedded Remote Support Technology	
	HP Insight Control Server Provisioning	
	HP Insight Online	
	HP Active Health System	
	System Insight Display	
	Rack rails and cable management arm	
	<b>NOTE:</b> PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion slots" section for more details.	
	<b>NOTE:</b> A minimum of two processors are required. The system may have three or four processors installed.	
	<b>NOTE:</b> A minimum of two memory cartridges are required (one per processor).	
	<b>NOTE:</b> A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).	
	<b>NOTE:</b> A minimum of two power supplies are required.	

### Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

<b>HP Processors</b>	<b>NOTE:</b> All processor kits contain one processor. If two or more processors are desired, select one xxxxxx-L21 and additional processors would be xxxxxx-B21.	
	<b>Fifteen-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) FIO Processor Kit	728955-L21
	HP DL580 Gen8 Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) FIO Processor Kit	728957-L21
	HP DL580 Gen8 Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) FIO Processor Kit	728959-L21
	HP DL580 Gen8 Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) FIO Processor Kit	728953-L21

### Configuration Information - Factory Integrated Models

#### Twelve-Core Processors

HP DL580 Gen8 Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) FIO Processor Kit	728963-L21
HP DL580 Gen8 Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) FIO Processor Kit	728965-L21
HP DL580 Gen8 Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) FIO Processor Kit	728961-L21

#### Ten-Core Processors

HP DL580 Gen8 Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) FIO Processor Kit	728967-L21
HP DL580 Gen8 Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) FIO Processor Kit	728969-L21

#### Eight-Core Processors

HP DL580 Gen8 Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) FIO Processor Kit	728971-L21
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#### Six-Core Processors

HP DL580 Gen8 Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) FIO Processor Kit	728975-L21
HP DL580 Gen8 Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) FIO Processor Kit	728973-L21

**NOTE:** A minimum of two processors are required. The system may have three and four processors installed.

### HP Memory

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21

#### Load Reduced DIMMs (LRDIMMS)

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
HP 64GB (1x64GB) Octa Rank x4 PC3-12800L (DDR3-1600) Load Reduced CAS-11 Memory Kit	700838-B21

#### Memory Expansion Options

HP DL580 Gen8 12 DIMM Slots Memory Cartridge	732411-B21
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**NOTE:** Up to Eight (8) memory cartridges are supported for 96 DIMM slots

### Configuration Information - Factory Integrated Models

**NOTE:** A minimum of two memory cartridges are required (one per processor).

**NOTE:** A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).

#### FlexibleLOMs

**NOTE:** Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.

**NOTE:** For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

**NOTE:** Wake-on-Lan feature is not supported on the DL580 Gen8 with FlexLOMs

HP Ethernet 1Gb 4-port 331FLR FIO Adapter 684208-B21

HP Ethernet 1Gb 4-port 366FLR FIO Adapter 684217-B21

HP FlexFabric 10Gb 2-port 533FLR-T FIO Adapter 700760-B21

HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter 700752-B21

HP FlexFabric 10Gb 2-port 556FLR-SFP+ FIO Adapter 732456-B21

**NOTE:**

- This adapter does not support FCOE Boot from SAN functionality on VMWare and FCOE functionality with RHEL 5.9

HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter 684218-B21

HP Ethernet 10Gb 2-port 561FLR-T FIO Adapter 700700-B21

HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter 764285-B21

#### HP Power Supplies

**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**HP Common Slot Platinum Plus Power Supply Kits**

**NOTE:** 94% efficiency with support for HP Power Discovery Services.

HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit 684532-B21

HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit 656364-B21

**NOTE:** Minimum of two (2) power supplies are required.

All power supplies in a server should match. Mixing Power Supplies is not supported.

**NOTE:** Option Kits contain the specified power supply and a PDU IEC cable.

**NOTE:** 1500W Power Supplies only support High Line Voltage.

**NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to [www.hp.com/products/powercords](http://www.hp.com/products/powercords)

#### Storage Controller FBWC

HP 2GB FIO Flash Backed Write Cache 758836-B21

HP 4GB FIO Flash Backed Write Cache 698537-B21

**NOTE:** One Flash Backed Write Cache is required for P830i SAS Controller

**NOTE:** Max of 4 capacitor modules can be installed.

### Step 3: Choose Additional Factory Integratable Options

#### Converged Infrastructure Management Software

**HP OneView with iLO Advanced - Server hardware required on same purchase order**

HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic E5Y43A

HP OneView incl 3yr 24x7 Supp Bundle 1 Svr E-LTU E5Y43AAE

**NOTE:** OneView is supported in Legacy BIOS mode only.

#### HP Insight Software

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License C6N36A

## Configuration Information - Factory Integrated Models

	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE
	<b>NOTE:</b> The Electronic software license is available in EMEA only.	
Security	HP Trusted Platform Module Option	488069-B21
	HP 4U Security Bezel Kit	741213-B21

## Step 4: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Core Options" and "Additional Options" section below.



### Core Options

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

<b>HP Processors</b>	<b>Fifteen-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processor Kit	728955-B21
	HP DL580 Gen8 Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) Processor Kit	728957-B21
	HP DL580 Gen8 Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor Kit	728959-B21
	HP DL580 Gen8 Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) Processor Kit	728953-B21
	<b>Twelve-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) Processor Kit	728963-B21
	HP DL580 Gen8 Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processor Kit	728965-B21
	HP DL580 Gen8 Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) Processor Kit	728961-B21
	<b>Ten-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) Processor Kit	728967-B21
	HP DL580 Gen8 Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processor Kit	728969-B21
	<b>Eight-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) Processor Kit	728971-B21
	<b>Six-Core Processors</b>	
	HP DL580 Gen8 Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processor Kit	728975-B21
	HP DL580 Gen8 Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) Processor Kit	728973-B21
	<b>NOTE:</b> A minimum of two processors are required. The system may have three or four processors installed.	

### HP Memory

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low	731765-B21

### Core Options

Voltage Memory Kit	
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21
<b>Load Reduced DIMMs (LRDIMMS)</b>	
HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
HP 64GB (1x64GB) Octa Rank x4 PC3-12800L (DDR3-1600) Load Reduced CAS-11 Memory Kit	700838-B21
<b>Memory Expansion Options</b>	
HP DL580 Gen8 12 DIMM Slots Memory Cartridge	732411-B21
<b>NOTE:</b> Up to Eight (8) memory cartridges are supported for 96 DIMM slots	
<b>NOTE:</b> A minimum of two memory cartridges are required (one per processor).	
<b>NOTE:</b> A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).	

<b>HP Optical Drives</b>	HP Mobile USB Non Leaded System DVD RW Drive	701498-B21
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<b>Factory Settings</b>	HP UEFI FIO Setting	758959-B21
	<b>NOTE:</b> For factory configuration of the server in UEFI mode.	
	HP Lockstep Memory Mode FIO Setting	773559-B21
	<b>NOTE:</b> A minimum of four DIMMs per cartridge is required and all installed cartridges must have identical DIMM configuration.	

<b>HP Hard Drives</b>	<b>NOTE:</b> The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	<b>NOTE:</b> Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	<b>SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives</b>	
	HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
	HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
	HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
	HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
	HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
	<b>SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives</b>	
	HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
	HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional	

### Core Options

information:

[http://h18004.www1.hp.com/products/quickspecs/12244\\_div/12244\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

#### **6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives**

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21

#### **6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives**

HP 1.6TB 6G SATA VE 2.5in SC EV SSD	757339-B21
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764929-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764927-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764925-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764923-B21

#### **6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives**

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21

#### **6G SATA Hot Plug SFF (2.5-inch) SC MDL HDD**

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

#### **6G SATA VE Hot Plug SFF (2.5-inch) SC EV G1 SSD**

HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid	756657-B21
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### Core Options

State Drive	
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756636-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756621-B21
<b>6G SATA LE Hot Plug SFF (2.5-inch) SC EL G1 SSD</b>	
HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive	756601-B21
<b>12G SAS Enterprise Performance, Mainstream and Value Solid State Drives</b>	
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
HP 800GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741159-B21
HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741155-B21
HP 200GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741151-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741146-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741142-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741138-B21
HP ProLiant DL580 Gen8 5 Small Form Factor Drive Backplane Cage Kit	739405-B21
HP Small Form Factor Hard Drive Blank Kit	666987-B21
HP DL580 Gen8 SAS Cable Kit	748916-B21
<b>NOTE: This cable is required when ordering one of the following Smart Array Controllers for installation in a PCIe slot.</b>	
HP Smart Array P830/4GB FBWC 12Gb 2-ports Int SAS Controller	698533-B21
HP Smart Array P430/4GB FBWC 12Gb 1-port Int SAS Controller	698530-B21
HP Smart Array P430/2GB FBWC 12Gb 1-port Int SAS Controller	698529-B21

### HP Networking

#### Gigabit Ethernet Adapters

HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

#### 10 Gigabit Ethernet Adapters

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21

### Core Options

#### FlexibleLOM Adapters

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21

**NOTE:** This adapter does not support FCOE Boot from SAN functionality on VMWare and FCOE functionality with RHEL 5.9.

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21

**NOTE:** Wake-On-LAN not supported with FlexLOMs on DL580 Gen8

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs)

### HP Power Supplies

**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

#### HP Common Slot Platinum Plus Power Supply Kits

**NOTE:** 94% efficiency with support for HP Power Discovery Services.

HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit	684532-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

**NOTE:** All power supplies in a server should match. Mixing Power Supplies is not supported.

**NOTE:** Option Kits contain specified power supply and PDU IEC cable.

**NOTE:** 1500W Power Supplies only support High Line Voltage.

**NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to [www.hp.com/products/powercords](http://www.hp.com/products/powercords)

### HP Graphic Options

**NOTE:** Up to five cards are supported on the DL580 Gen8. Supporting multiple number of cards on the DL580 Gen8 blocks some active IO cards as follows due to space constraints:

For 2P config: Max of 2 double-wide cards are supported on slot 6 and slot 9 (slot 8 is blocked)

For 3P config: Max of 3 double-wide cards are supported on slot 3, slot 6 and slot 9 (slot 5 and slot 8 are blocked)

For 4P config: Max of 5 double wide cards are supported on Slot 1, Slot 3, Slot 2, Slot 6 and Slot 9 (slot 5 and slot 8 are blocked).

**NOTE:** HP DL580/DL585/DL980 Power Cable Kit (631660-B21) is required for Graphics cards. Each cable kit has two 8-pin connectors (one 150W and other 225W) and can support up to two cards. For three cards, two cable kits are required. For five cards, three cable kits are required. The cards pull up to 75W of power from the IO slot and the rest from the auxiliary power connectors.

**NOTE:** Both UEFI mode and Legacy Mode are supported.

NVIDIA Quadro K6000 PCI-E Graphics Adapter	730874-B21
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**NOTE:** Supported at Gen2 speeds

NVIDIA Tesla K40C 12GB Computational Accelerator	753960-B21
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Core Options

**NOTE:** Supported at Gen2 speeds  
NVIDIA GRID K2 Reverse Air Flow Dual GPU PCIe Graphics Accelerator 753958-B21  
**NOTE:** Only three cards are supported with MS Windows Server 2012 R2

**Auxiliary Power Cables** **NOTE:** The DL580 Gen8 supports six auxiliary power connectors  
HP DL580/DL585/DL980 Power Cable Kit 631660-B21  
**NOTE:** Order with GPGPUs for providing additional power to the IO cards.



### Additional Options

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

<b>HP Insight Software</b>	<b>HP Insight Control</b>	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	<b>NOTE:</b> Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.	
	<b>NOTE:</b> Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	<b>NOTE:</b> Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a> .	
	<b>NOTE:</b> For additional license options please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a>	
	<b>HP Integrated Lights-Out (iLO) Advanced for ProLiant</b>	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
<b>Converged Infrastructure Management Software</b>	<b>HP OneView</b>	
	HP OneView with iLO Advanced	
	HP OneView Media Kit Phys No Lic	E5Y37A
	HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y34A
	HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU	E5Y35AAE
	<b>HP OneView without iLO Advanced</b>	
	HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y38A
	HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU	E5Y39AAE
	<b>NOTE:</b> OneView is supported in Legacy BIOS mode only Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14621_div/14621_div.html">http://h18000.www1.hp.com/products/quickspecs/14621_div/14621_div.html</a> (Worldwide)	
<b>HP I/O Accelerator Options</b>	<b>Second Generation Accelerators</b>	
	HP 1.3TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763834-B21
	HP 1.6TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763836-B21
	HP 3.2TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763838-B21
	HP 6.4TB FH/HL Value Endurance (VE) PCIe Workload Accelerator	763840-B21

### Additional Options

HP 1.0TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775666-B21
HP 1.3TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775668-B21
HP 2.6TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775670-B21
HP 5.2TB FH/HL Light Endurance (LE) PCIe Workload Accelerator	775672-B21
HP 350GB HH/HL High Endurance (HE) PCIe Workload Accelerator	708088-B21
HP 700GB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator	729305-B21
HP 700GB HH/HL High Endurance (HE) PCIe Workload Accelerator	708090-B21
HP 1.4TB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator	729307-B21
HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21

**NOTE:** Both Legacy and UEFI BIOS modes are supported. Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13587\\_div/13587\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html)  
(Worldwide)

### HP Storage Controllers

#### SAS Controllers

##### Smart Array P430 Controller

HP Smart Array P430/2GB FBWC 12Gb 1-port Int SAS Controller	698529-B21
HP Smart Array P430/4GB FBWC 12Gb 1-port Int SAS Controller	698530-B21

##### Smart Array P431 Controller

HP Smart Array P431/2GB FBWC 12Gb 2-ports Ext SAS Controller	698531-B21
HP Smart Array P431/4GB FBWC 12Gb 2-ports Ext SAS Controller	698532-B21

##### Smart Array P830 Controller

HP Smart Array P830/4GB FBWC 12Gb 2-ports Int SAS Controller	698533-B21
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#### Optional Upgrades

HP SmartCache No Media 24x7 Technical Support 1 Svr License	D7S26A
HP SmartCache No Media 24x7 Technical Support Flexible License	D7S27A
HP SmartCache No Media 24x7 Technical Support Electronic License	D7S27AAE

**NOTE:** A maximum of four HP Smart Array Controllers (including embedded controller) can be installed

**NOTE:** For more information about HP SmartCache, go to [www.hp.com/go/smartcache](http://www.hp.com/go/smartcache)

**NOTE:** Both Legacy and UEFI modes are supported

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/14624\\_div/14624\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14624_div/14624_div.html)  
(Smart Array P430 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14625\\_div/14625\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14625_div/14625_div.html)  
(Smart Array P431 Controller)

[http://h18000.www1.hp.com/products/quickspecs/xxxxx\\_div/xxxxx\\_div.html](http://h18000.www1.hp.com/products/quickspecs/xxxxx_div/xxxxx_div.html)  
(Smart Array P830 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14532\\_div/14532\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14532_div/14532_div.html)  
(SmartCache)

### HP Secure Encryption

HP Secure Encryption No Media E-LTU per Drive	D8S85AAE
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### Additional Options

HP Secure Encryption No Media Flexible License per Drive D8S84A

**NOTE:** HP Secure Encryption is supported on the HP Smart Array P830, P430 and P431 as an option. HP Secure Encryption licensing is based on the number of physical drives requiring encryption.

**NOTE:** For more information about HP Secure Encryption, go to [www.hp.com/go/hpsecureencryption](http://www.hp.com/go/hpsecureencryption)

<b>HP Power Cords</b>	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A

<b>HP Tape Backup</b>	<b>NOTE:</b> For the complete range of tape drives, autoloaders, libraries and media see: <a href="http://www.hp.com/go/tape">http://www.hp.com/go/tape</a> . For hardware and software compatibility of HP tape backup products see: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a> and <a href="http://www.hp.com/go/ebs">www.hp.com/go/ebs</a> .	
	<b>NOTE:</b> For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.	
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
	HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	C0H19A

<b>HP Tape Storage Systems</b>	<b>HP StoreEver MSL6480</b>	
	HP StoreEver MSL6480 Scalable Base Module	QU625A
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html">http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html</a> (Worldwide)	

<b>HP Disk Backup</b>	<b>NOTE:</b> For the complete range of RDX drives and media see: <a href="http://www.hp.com/go/rdx">http://www.hp.com/go/rdx</a> . For hardware and software compatibility of HP disk backup products see: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a> .	
	<b>NOTE:</b> For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.	
	HP RDX320 USB3.0 External Disk Backup System	B7B63A
	HP RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HP RDX500 USB3.0 External Disk Backup System	B7B66A
	HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HP RDX1000 USB3.0 External Disk Backup System	B7B69A
	HP RDX 2TB USB3.0 Internal Disk Backup System	E7X52A
	HP RDX 2TB USB3.0 External Disk Backup System	E7X53A

<b>HP Disk Storage Systems</b>	<b>Disk Enclosures</b>	
	HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle	E7W32A

### Additional Options

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13404\\_div/13404\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html)  
 (Worldwide)

<b>HP Converged Network Adapters</b>	HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
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**NOTE:** FCOE boot from SAN is not supported with VMWare.

	HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A
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**NOTE:** Both UEFI and Legacy mode are supported.

<b>HP Infiniband Options</b>	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
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**NOTE:** UEFI and Legacy modes are supported with Ethernet and Infiniband functionality.

	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21
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**NOTE:** UEFI and Legacy modes are supported with Ethernet and Infiniband functionality.

	HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
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**NOTE:** Legacy and UEFI modes are supported

### HP Storage Options

#### Storage Fibre Channel HBA

**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:  
<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

#### QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
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HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
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HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
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HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
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#### Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
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HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
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HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
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HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
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**NOTE:** Both Legacy and UEFI mode is supported.

### HP Uninterruptible Power Systems

#### HP Rack-mountable UPS

##### HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
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HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
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HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
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**NOTE:** Please see the QuickSpecs for additional information:  
[http://h18000.www1.hp.com/products/quickspecs/14059\\_div/14059\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html)  
 (Worldwide)

##### HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
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HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
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### Additional Options

HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14058\\_div/14058\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html)  
(Worldwide)

#### **R5000 Uninterruptible Power System (UPS)**

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14109\\_div/14109\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html)  
(Worldwide)

#### **R7000 Uninterruptible Power System (UPS)**

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A

HP R5KVA and R7KVA 3U Extended Runtime Module AF464A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14110\\_div/14110\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html)  
(Worldwide)

#### **HP Rackmountable 3 Phase Uninterruptible Power Systems (UPS R8000/3 and R12000/3)**

HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System AF431A

HP R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System AF432A

HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System AF429A

HP R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System AF430A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/12857\\_div/12857\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12857_div/12857_div.html)  
(Worldwide)

**NOTE:** For additional information on HP Uninterruptible Power Systems please go to:  
[www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).

**NOTE:** For additional information on sizing your server, please reference:  
<http://www.upssizer.com>.

**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

#### **HP Basic Power Distribution Units (pPDU)**

##### **HP Basic Power Distribution Unit: 1U/OU Version**

HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU H5M54A

HP 3.6kVA 200-240 Volt Detachable C20 Input ( 12xC13) WW Basic PDU H5M56A

##### **HP Basic Power Distribution Unit: Half Height Version**

HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU H5M55A

HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU H5M57A

HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU H5M58A

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU H5M68A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU H5M61A

##### **HP Basic Power Distribution Unit: Mid Height Version**

### Additional Options

HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU	H5M59A
HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A
HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU	H5M60A
HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU	H5M71A
HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU	H5M75A
HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU	H5M63A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU	H5M64A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU	H5M62A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A
<b>HP Basic Power Distribution Unit: Full Height Version</b>	
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU	H5M73A
HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU	H5M67A
<b>HP Basic Power Distribution Unit: 480/277 Volt Version</b>	
HP 13.2kVA 480 Volt IEC309 30A 3-Phase Input (15 Outlet) NA Basic PDU	H3X07A
HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU	H3X08A
HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html">http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html</a> (Worldwide)	
<b>NOTE:</b> Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: <a href="http://www.hp.com/go/rackandpower">www.hp.com/go/rackandpower</a> .	

### HP Remote Monitoring Power Distribution Units (mPDU)

<b>HP Remote Monitored Power Distribution Unit: 1U Version</b>	
HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU	D9N43A
HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU	D9N46A
HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	D9N44A
<b>HP Remote Monitored Power Distribution Unit: Half Height Version</b>	
HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
<b>HP Remote Monitored Power Distribution Unit: Mid Height Version</b>	
HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A
HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU	D9N48A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU	D9N51A
HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU	D9N52A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU	D9N53A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU	D9N55A
<b>HP Remote Monitored Power Distribution Unit: Full Height Version</b>	
HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU	D9N49A
HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU	D9N50A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N57A
HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU	D9N58A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU	D9N61A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored	D9N54A



### Additional Options

PDU	
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU	D9N60A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N56A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N62A
HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU	D9N63A
<b>HP Environmental Sensor for Remote Monitored PDUs</b>	
HP Environmental Sensor for Remote Monitored PDUs	E2D53A
<b>NOTE:</b> Please see the QuickSpecs for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html">http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html</a> (Worldwide)	

### HP Intelligent Power Distribution Units (iPDU)

#### iPDU Core Units

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A

HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A

#### iPDU Kits with Standard Extension Bars

HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit	AF534A

#### iPDU Extension Bars

HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13650\\_div/13650\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html)  
(Worldwide)

### HP Rack Options

### HP Location Discovery Services

HP 36U Location Discovery Kit	BW945A
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### Additional Options

HP 42U Location Discovery Kit	BW946A
HP 47U Location Discovery Kit	BW947A
<b>HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)</b>	
HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13731\\_div/13731\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html)  
(Worldwide)

#### HP USB Keyboard and Mouse

HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13972\\_div/13972\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html)  
(Worldwide)

#### HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/11834\\_div/11834\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html)  
(Worldwide)

### Additional Options

#### HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HP KVM CAT5 1-pack USB Interface Adapter	336047-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13475\\_div/13475\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html)  
 (Worldwide)

#### HP IP Console Switch G2 with Virtual Media & CAC

HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13474\\_div/13474\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html)  
 (Worldwide)

### HP USB and SD Options

#### HP Flash Media Kits for USB Drives

HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
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#### HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
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HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
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**NOTE:** Please see the QuickSpecs for additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13971\\_div/13971\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13971_div/13971_div.html)  
 (Worldwide)

### HP Care Pack Services

#### Proactive Care

**NOTE:** Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

HP 3 year 4 hour 24x7 ProLiant DL58x Proactive Care Service	U2Z68E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL58x Proactive Care Service	U2Z71E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL58x Proactive Care Service	U2Z74E
HP 3 year 6 hour Call To Repair 24x7 with Defective Media Retention ProLiant DL58x Proactive Care SVC	U2Z77E

#### Proactive Care Personalized Support - Environmental Option

**NOTE:** To add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advices for the customer's environment.

HP 3 year ISS ProactiveCare Personalized Support	U6W98E
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#### Installation Services

**NOTE:** Reduce the time required to get your system up and running and help minimize disruptions to your business.

### Additional Options

HP Install ProLiant DL58x Service	U4617E
HP Startup ProLiant DL58x Service	U4618E
HP Installation and Startup for Insight Control Software	UF369E
HP Startup HP Systems Insight Manager Service	UA041E

**NOTE:** For more information, customer/resellers can contact:  
<http://www.hp.com/services/carepack>

### Memory

#### HP SmartMemory

New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP ProLiant Gen8 server. With HP SmartMemory your new HP ProLiant server can take advantage of additional Gen8 enhancements in performance, durability and future manageability support through HP Active Health System.

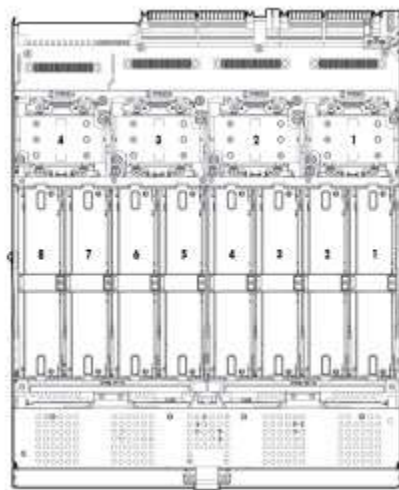
For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

[www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator)

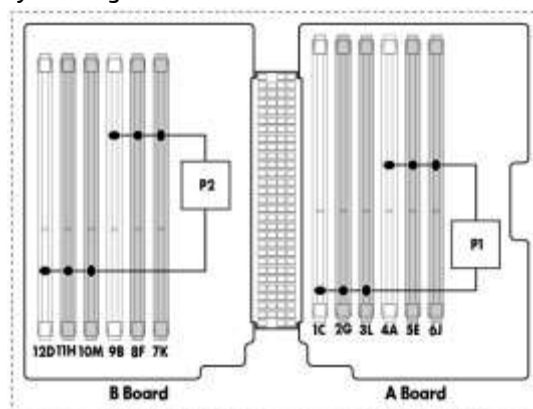
#### Memory Sub-system Architecture

As shown in the figure above, memory cartridge to processor association as follows:

- Memory cartridges installed without a corresponding processor are not utilized:
  - Processor 1 corresponds to memory cartridges 1 and 2.
  - Processor 2 corresponds to memory cartridges 3 and 4.
  - Processor 3 corresponds to memory cartridges 5 and 6.
  - NOTE: Memory cartridges 5 and 6 are not recognized if processor 3 is not installed.
  - Processor 4 corresponds to memory cartridges 7 and 8.
  - NOTE: Memory cartridges 7 and 8 are not recognized if processor 4 is not installed.



Each memory cartridge contains 12 DIMM slots as shown in figure below:



### Memory

The memory subsystem in this server is divided into channels. Each processor supports eight channels, and each channel supports three DIMM slots, as shown in the table below. White DIMM slots denote the first slot of a channel (Ch 4A, Ch 9B, Ch 1C, Ch 12D...).

Channel	Population order	Slot number
1	A	4
	E	5
	J	6
2	B	9
	F	8
	K	7
3	C	1
	G	2
	L	3
4	D	12
	H	11
	M	10

The server can operate in independent channel mode (performance) or combined channel mode (lockstep). Lockstep mode improves the system reliability and availability. If running with RDIMM (built with x4 DRAM devices), the system can survive the complete failure of two DRAM devices (DDDC). Running in independent mode, the server can only survive the complete failure of a single DRAM device (SDDC).

Memory performance depends on selected processor and whether the system is configured for independent channel mode (performance mode) or lockstep mode (RAS mode).

Max memory speed	Processors
1600MHz	E7-8893 V2, E7-8891 v2, E7-8880L v2, E7-8857 v2, E7-4890 v2, E7-4880 v2, E7-4870 v2, E7-4860 v2
1333MHz	E7-4850 v2, E7-4830 v2, E7-4820 v2
1066MHz	E7-4809 v2

#### Independent channel mode (Performance mode):

In this mode each DDR3 channel works independently and the SM12 channel operates at twice the DDR3 speed (2667 MT/s max). The server supports the following DIMM speeds as shown below in the table.

DIMM type	DIMM rank	Voltage	1 DIMM per channel	2 DIMMs per channel	3 DIMMs per channel
RDIMM	Single-rank (4 GB)	LV	1333	1066	1066
RDIMM	Single-rank (4 GB)	STD	1333	1333	1333
RDIMM	Single-rank (8 GB)	LV	1333	1066	1066
RDIMM	Single rank (8 GB)	STD	1333	1333	1333
RDIMM	Dual-rank (16 GB)	LV	1333	1066	1066
RDIMM	Dual-rank (16 GB)	STD	1333	1333	1333
LRDIMM	Quad-rank (32GB)	STD	1333	1333	1333
LRDIMM	Octal-rank (64GB)	STD	1066	1066	1066

#### Lockstep mode:

In this mode, the memory controller operates two DDR3 channels behind one memory buffer as single channel and the SM12 channel operates at the DDR3 transfer rate (1600 MT/s max).

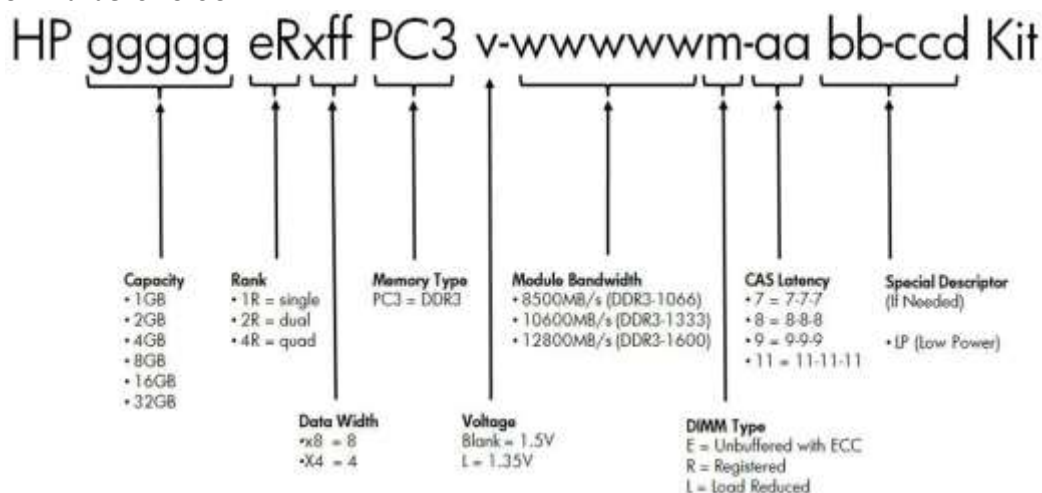
The server supports the following DIMM speeds as shown below in the table.

DIMM type	DIMM rank	Voltage	1 DIMM per channel	2 DIMMs per channel	3 DIMMs per channel
RDIMM	Single-rank (4 GB)	LV	1333	1066	1066
RDIMM	Single-rank (4 GB)	STD	1600	1600	1333
RDIMM	Single-rank (8 GB)	LV	1333	1066	1066

### Memory

RDIMM	Single rank (8 GB)	STD	1600	1600	1333
RDIMM	Dual-rank (16 GB)	LV	1333	1066	1066
RDIMM	Dual-rank (16 GB)	STD	1600	1600	1333
LRDIMM	Quad-rank (32GB)	STD	1600	1600	1333
LRDIMM	Octal-rank (64GB)	STD	1066	1066	1066

### DIMM Classification and Identification



### Memory Population Guidelines

- To maximize performance, install two memory cartridges per processor and balance the total memory capacity between all installed processors.
- When multiple processors are installed, HP recommends installing the DIMMs in sequential alphabetical order: 4A, 9B, 1C, 12D, and so on.
- LRDIMMs support higher densities than single- and dual-rank RDIMMs, and higher speeds than quad-rank RDIMMs. This support enables you to install more high capacity DIMMs, resulting in higher system capacities and higher bandwidth.
- Do not mix LRDIMMs with any other DIMM type (RDIMM, LVDIMM).
- RDIMM population is limited to a maximum of eight logical ranks per channel. Therefore, only two quad rank RDIMMs are supported per channel. If there are more than eight physical ranks per channel, LRDIMMs rank multiplication provides support for three DIMMs per channel.
- Lockstep mode requires specific population requirements. See lock-step configuration below for more information.

**NOTE:** UDIMMs are not supported. This server does not support mixing LRDIMMs, RDIMMs, or UDIMMs. Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS initialization.

For detailed memory configuration rules and guidelines, use the Online DDR3 Memory Configuration Tool on the HP website (<http://www.hp.com/go/ddr3memory-configurator>).

### Online Sparing Configuration Guidelines

Online spare memory provides protection against degraded DIMMs by reducing the likelihood of uncorrected memory errors. This protection is available without any operating system support.

Online spare memory protection dedicates one rank of each memory channel for use as spare memory. The remaining ranks are available for OS and application use. If correctable memory errors occur at a rate higher than a specific threshold on any of the non-spare ranks, the server automatically copies the memory contents of the degraded rank to the online spare rank. The server then deactivates the failing rank and automatically switches over to the online spare rank.

For Online Spare memory mode configurations, observe the following guidelines:

- Observe the general DIMM slot population guidelines.

### Memory

- Each channel must have a valid online spare configuration.
- Each channel can have a different valid online spare configuration.
- Each populated channel must have a spare rank.
- A single dual-rank DIMM is not a valid configuration.
- LRDIMMs are treated as dual-rank DIMMs.

#### HP Memory

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
HP 64GB (1x64GB) Octa Rank x4 PC3-12800L (DDR3-1600) Load Reduced CAS-11 Memory Kit	700838-B21

#### Memory Expansion Options

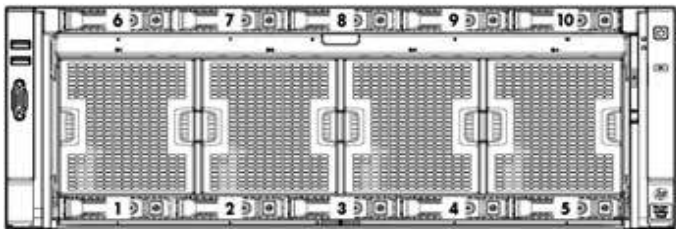
HP DL580 Gen8 12 DIMM Slots Memory Cartridge	732411-B21
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**NOTE:** A minimum of two memory cartridges are required (one per processor).

**NOTE:** A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).



## Storage



- 1-10 Ten (10) SFF Hot-plug HDD/SSD drive bays  
**NOTE:** Drives installed in bays 6-10 require the optional SAS backplane kit.

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### Maximum Internal Storage

Hot Plug SFF SAS	12TB	10 x 1.2TB
Hot Plug SFF SAS SSD	16TB	10 x 1.6TB
Hot Plug SFF SATA SSD	8TB	10 x 800GB

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	6.88" x 17.48" x 29" (17.5cm x 44.4cm x 73.6cm)	
	<b>Weight</b> (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	116.56.0 lb (52.87 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	70.94 lb (32.18 kg)
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 - 120 VAC (1200W PS only) 200 - 240 VAC (1200W & 1500W PS)
		Rated Input Current	9.2A (100 VAC), 6.6A (200 VAC) - 1200W PS 8.3A (200 VAC) - 1500W PS
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1000 W (120 VAC), 1320 W (230VAC) - 1200W PS 1652 W (at 230 VAC) - 1500W PS
	<b>BTU Rating</b>	Maximum	3408 BTU/hr (120 VAC), 4500 BTU/hr (at 230 VAC) - 1200W PS 5637 BTU/hr (230 VAC) - 1500W PS
	<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the HP Power Advisor which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>  - Click on the system of interest. Example: DL580 G7 - Follow the instructions of the next screens.	
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power and Maximum Peak Power	800 W (100 VAC low line), 900 W (120 VAC low line), 1200W (200 - 240 VAC) for 1200W PS 1500W (200 - 240V) for 1500W PS
	<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-40° to 70°C (-40° to 158°F). Maximum rate of change is 20°C/hr (36°F/hr).
	<b>Relative Humidity</b> (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non- condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non- condensing.
	<b>Altitude</b>	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed.

Technical Specifications

		Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 24°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Typical configuration (Two Intel® Xeon® E7-4890 v2 processors, 8x16 GB DIMMs, five HDDs, Eight fans, Four power supplies)	
	Idle	<ul style="list-style-type: none"><li>LWAd – 6.8 B</li><li>LpAm – 51.2</li></ul>
	Operating	<ul style="list-style-type: none"><li>LWAd – 6.9 B</li><li>LpAm – 51.2</li></ul>
	Performance Configuration (Four Intel® Xeon® E7-4890 v2 processors, 16x16 GB DIMMs, Ten HDDs, Eight fans, Four power supplies)	
	Idle	<ul style="list-style-type: none"><li>LWAd – 6.7 B</li><li>LpAm – 50.7</li></ul>
	Operating	<ul style="list-style-type: none"><li>LWAd – 6.9 B</li><li>LpAm – 51.3</li></ul>
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
	<b>NOTE:</b> Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

HP Smart Array P830i	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	12 Gb/s SAS, 6 Gb/s SAS & SATA
	SAS Connectors	2 internal x8 Mini-SAS double-wide internal
	Cache Memory Speed	DDR2-1866MHz with 72-bit wide bus at 14.9 GB/s (4 GiBytes Cache Module)
	SAS Speed	12Gb/s per physical link
	Cache Memory	FBWC cache is required. 2GB is included with BTO models. For CTO, 2GB or 4GB FBWC cache is required.
	Logical Drives Supported	Up to 64 logical volumes
	Host Memory Addressing	64-bit, supporting greater than 4GiB server memory space
	RAID Support	RAID 6, 60 (Advanced Data Guarding)

### Technical Specifications

		RAID 5, 50 (Distributed Data Guarding)
		RAID 1, 10 (Drive Mirroring), RAID 1 ADM, 10 ADM (Advanced Data Mirroring)
		RAID 0 (Striping)
<b>HP Ethernet 1Gb 4-port 331FLR Adapter</b>	<b>HP Flexible Network Technology</b>	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.
	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX
	<b>Compatibility</b>	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3x IEEE 802.3ad 1000Base-TX IEEE 802.3az IEEE 1588 802.1as IEEE 802.1q 100Base-TX
	<b>Data Transfer Method</b>	PCI-Express 2.0 x4
	<b>Controller</b>	BCM5719
	<b>Network Transfer Rate</b>	10Base-T (Full-Duplex) 20 Mb/s 100Base-TX (Full-Duplex) 200 Mb/s 1000Base-TX (Full-Duplex) 2000 Mb/s
	<b>Connector</b>	RJ-45
	<b>Cable Support</b>	10Base-T Categories 3, 4, or 5 UTP; up to 328 ft (100 m) 100Base-TX Category 5 or higher UTP; up to 328 ft (100 m) 1000Base-TX Category 5 or higher UTP; up to 328 ft (100 m)
<b>HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter</b>	<b>HP Flexible Network Technology</b>	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.
	<b>Network Interface</b>	IEEE 802.3 SFP+ (SX, SR & LR)
	<b>Compatibility</b>	802.3, 802.3ae, 802.3x, 802.2x, 802.3ad, 802.1Qaz, 802.1Qau, 802.1Qbb, 802.1Qbg, 802.1ax
	<b>Data Transfer Method</b>	PCI-Express 2.0 x8
	<b>Controller</b>	Broadcom BCM57810S chipset
	<b>Network Transfer Rate</b>	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.
<b>HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter</b>	<b>Connector</b>	Two SFP+
	<b>Cable Support</b>	Maximum distances for CAT6 cable are 30 meters (98 feet). Maximum distances for CAT6a are 100 meters (328 feet).
<b>HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter</b>	<b>HP Flexible Network Technology</b>	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.
	<b>Network Interface</b>	SFP+ for Direct Attach Cable copper or fiber
	<b>Compatibility</b>	802.3, 802.1ab, 802.3x, 802.3ad, 802.1p/ 802.1q, 802.3ae, 802.1Qau
	<b>Data Transfer Method</b>	PCI-Express 2.0 x8
	<b>Controller</b>	Intel® 82599 Controller
<b>HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter</b>	<b>Network Transfer Rate</b>	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.

Technical Specifications

<b>Connector</b>		Two SFP+	
<b>Cable Support</b>		10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	<p>Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p>	
		<p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>	

### Summary of Changes

Date	Version History	Action	Description of Change:
19-Dec-2014	From Version 12 to 13	Changed	Changes made to NA version only. Matching version numbers
01-Dec-2014	From Version 11 to 12	Changed	Core Options and Memory sections were updated
		Added	Sku Added on Hard Drives: 757339-B21
01-Nov-2014	From Version 10 to 11	Changed	Service and Support section was updated
29-Sep-2014	From Version 9 to 10	Added	Skus added on HP Hard Drives:
			<ul style="list-style-type: none"> <li>764923-B21</li> <li>764925-B21</li> <li>764927-B21</li> <li>764929-B21</li> <li>756657-B21</li> <li>756636-B21</li> <li>756621-B21</li> <li>756601-B21</li> </ul>
09-Sep-2014	From Version 8 to 9	Changed	Overview and Additional Options sections were updated
		Removed	Obsolete sku was removed:
		Added	<ul style="list-style-type: none"> <li>AF902A</li> </ul>
		Added	Skus added:
			<ul style="list-style-type: none"> <li>732456-B21</li> <li>655710-B21</li> <li>655708-B21</li> <li>E7Y06A</li> </ul>
18-Aug-2014	From Version 7 to 8	Changed	What's New, Configuration Information (Memory, FlexibleLOM), Core Options (Memory, Hard Drives, Networking, HP Graphics Options, HP I/O Accelerators Options), Additional Options (HP Power Cords, HP Converged Network Adapters, HP Infiniband Options, HP Storage Options, HP USB and SD Options) and Memory sections were revised.
14-Jul-2014	From Version 6 to 7	Changed	Correction made to the Technical Specifications section.
27-Jun-2014	From Version 5 to 6	Added	What's new section was added Acoustic noise in Technical Specifications section was added
		Changed	FlexibleLOM in standard features section was updated FlexibleLOM in Configuration Information-Factory Integrated Models was updated HP Networking in Core Options was updated HP Storage Options in additional options was updated
10-Jun-2014	From Version 4 to 5	Changed	Memory, Networking, Hard Drives, Storage Controllers, HP Basic and Remote Monitoring Power Distribution Units were revised.
31-Mar-2014	From Version 3 to 4	Changed	Changes were made throughout.
07-Mar-2014	From Version 2 to 3	Changed	Changes were made in the Smart Buy section of the North America and Canada versions.
01-Mar-2014	From Version 1 to 2	Changed	Changes were made in the North America and Canada versions.

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## Summary of Changes

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.